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## RESEARCH NEWSLETTER

FEB. TO APR. 2017

3<sup>rd</sup> ISSUE

### RESEARCH CELL

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It is our pleasure to release 3<sup>rd</sup> issue of the quarterly Newsletter with the aim to enlighten about various activities of Research Cell and to introduce innovative aspects of the Stem Cell Research and its implications in medical field.

Stem Cells have enormous potential for alleviating suffering for many diseases which currently have no effective therapy. It has been shown that they can be extremely beneficial in therapeutic cloning to treat chronic illness and also a stepping stone into the advancement of regenerative medicine. It is believed that Stem Cell Research will be a boon for both basic and translational research.

Stem Cell definitely offers great promises for the benefit of science and society.

Research Cell is grateful to Dr. R. P. Bharaney, Additional Dean & Head, Department of Surgery, SBKSMI&RC, for sharing his views on Stem Cells Research and its future possibilities as regenerative medicine. This Newsletter is also enriched with various activities of Research Cell in view of establishment of sustained research oriented environment.

We expect that this edition of newsletter will help the faculty and researchers to update themselves. Your suggestions are welcome to make this communication more meaningful.



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### **Research news update of research theme of last Newsletter"Antimicrobial Resistance"**

Researchers from the University of Birmingham and Newcastle University in the UK identified two patients with Bronchiectasis who suffered with chronic *Pseudomonas aeruginosa* infections that were resistant to many antibiotics.

The patients volunteered to be part of an explorative treatment that built on previous findings from the research group of 2014. Scientists decided to remove this antibody from the bloodstream and the outcomes are wholly positive. They used the

process called "Plasmapheresis" which involved the removal, treatment and return of blood plasma from circulation and was done in 5 times a week in order to remove

antibody from the patients.

For details please go through the weblink:

<http://www.deccanchronicle.com/lifestyle/health-and-wellbeing/310317/new-approach-may-help-combat-drug-resistant-superbugs.html> (31<sup>st</sup> March, 2017)



## Current Updates in Medical Field

### Vaccine against Type I Diabetes has been announced

A vaccine used for Tuberculosis, Bacillus Calmette-Guerin (BCG) is now used for treating bladder cancer. And the use of this vaccine for diabetes was announced by American Diabetes Association at the 75th Scientific Session.

People who suffer from diabetes and who have been injected with the vaccine noticed an increase in the levels of a substance called tumor necrosis factor. The increased level of TNF in the system annihilates the T cells which obstruct the process of production of insulin.

<https://jerseydemic.com/the-vaccine-against-diabetes-has-been-officially-announced-and-the-entire-world-is-celebrating-the-news/>

(4<sup>th</sup> March, 2017)

### Kenya, Ghana and Malawi chosen for World's first Malaria Vaccine Trial

On 'World Malaria Day', WHO has announced that new malaria vaccine trial will take place in three African countries, Ghana, Kenya and Malawi. Malaria remains one of the world's deadliest diseases – killing close to half a million people every year, mostly in Africa. So the testing of a new vaccine called RTSS has been greeted as a great step forward. It's hoped that 360,000 children will be vaccinated between 2018 and 2020 in Kenya, Ghana and Malawi.

<https://www.voanews.com/a/ghana-kenya-malawi-to-test-first-malaria-vaccine/3822945.html>

(24<sup>th</sup> April, 2017)



Bacteria present in human saliva has





Researchers at Boston University's Henry M. Golden School of Dental Medicine isolated enzyme, gluten-degrading enzymes from *Rothia mucilaginosa*, an oral microbial colonizer. They have found that exceptionally high gluten-degrading enzyme activities are naturally associated with bacteria that colonize the oral cavity.

<http://www.dentalproductsreport.com/dental/article/common-oral-bacteria-could-treat-troublesome-illness> (16<sup>th</sup> Sept.,2016)



### Relationship between Gum Disease and Esophageal Cancer

Researchers from the University of Louisville School of Dentistry examined the presence of the bacteria, *Porphyromonas gingivalis* cell DNA in esophageal tissue, and measured the level of an enzyme unique to *P. gingivalis* called lysine-gingipain which found to be more prevalent in the cancerous tissue of ESCC patients. This bacteria is also correlated with other factors, including metastasis and overall survival rate.

<http://www.dentalproductsreport.com/dental/article/gum-disease-linked-highly-deadly-cancer> (1<sup>st</sup> Mar.,2016)

## Prescribing generic medicines already a must under MCI rules

Bema Nagarajan  
@timesgroup.com

### GENERIC & BRANDED DRUGS

While Prime Minister Narendra Modi has said that "legal arrangements" will be made to ensure prescription of generic medicines becomes compulsory, the fact is that this is already mandatory. The Medical Council of India's (MCI) ethics code for doctors made generic prescription mandatory in October 2006, though it has never been enforced.

Health being a state subject, the other method the Centre has of regulating prescription practices is by

**WHAT IS A GENERIC DRUG**  
A generic drug is a low-cost version of a formulation that is equivalent to a branded product in quality, dosage, strength, route of administration and efficacy. Usually, generic products are allowed to enter the market after expiry of patent protectors granted to a drug's original developer.

**WHY DOCTORS PRESCRIBE BRANDED DRUGS?**  
In India, unlike most developed markets, even after expiry of patent protection, generic drugs are available under brands and are called 'Branded Generics'. Pharmaceutical companies spend exorbitant amounts on branding and marketing of such products. Since advertisement of prescription medicines are not allowed in India, companies or medical representatives push their products through doctors, chemists and distributors in lieu of freebies, junkets and incentives.

**WHAT GOVERNMENT INTENDS TO DO?**  
By bringing a legal framework, the government wants to ensure that doctors prescribe only by generic or formulation name of a medicine. By making it mandatory for companies to carry generic names of drugs on their packs, consumers will be empowered to ask for a generic drug at the chemist. This is expected to reduce medical bills.



## India set for a record with rollout of world's first child-friendly TB drug

Launch In All States By End Of 2017



The child-friendly drug, which will be **flavoured and easily dissolvable**, will benefit around **75,000 children** in the country who suffer from tuberculosis.

More than seven years after the World Health Organisation (WHO) approved publication in India, the country will become the largest country globally to roll out the world's first child-friendly TB drug.

The child-friendly tablet, which can be crushed into a fine, tasteless powder, has been recently in-

duced through the government's TB control programme in all states, and will now be launched, probably through government centres in the remaining states this year.

to be a game-changer in drug delivery and improving therapy in India, because of the high TB burden and 17 lakh child TB patients as per government estimates.

"India will be the first country in the world to offer the highest number of children every year who will take oral TB drugs across the globe. The child-friendly treatment could, therefore, prevent 30,000 deaths over the next 20 years in both the public and private sectors. The rollout of the new TB medicine will also be made available through 10,000 Government Dispensaries, which will ensure one medicine per 1,000 population," said V. J. Anand, Executive Director of Medicines Division, Ministry of Health and Family Welfare.

Times of India: 19th April, 2017  
<http://epaperbeta.timesofindia.com/Article.aspx?eid=31805&articlexml=Prescribing-generic-medicines-already-a-must-under-MCI-19042017007039>

Times of India: 19th April, 2017  
<http://epaperbeta.timesofindia.com/Article.aspx?eid=31805&articlexml=India-set-for-a-record-with-rollout-of-19042017007013>

# Recent Buzz on Stem Cells



**Stem cells can be a revolutionary medicine for mental disorders as well as cardiac issues.**

<http://www.medicalnewstoday.com/articles/316765.php>

<http://timesofindia.indiatimes.com/city/vadodara/Stem-cell-therapy-a-new-hope-for-mentally-challenged/articleshow/55988781.cms>

## Stem Cells

Stem Cells are the foundation cells for every organ and tissue in our bodies. The highly specialized cells that make up these tissues originally came from an initial pool of stem cells formed shortly after fertilization.

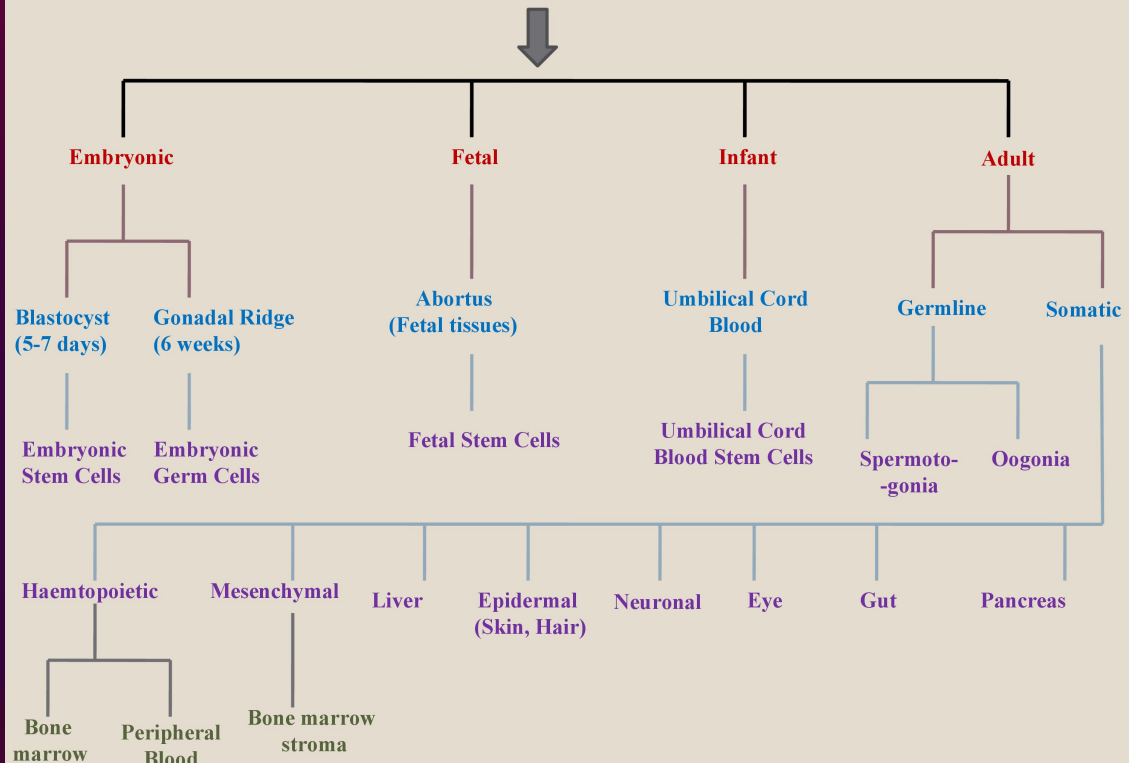
Stem cells have two key properties:

- 1) the ability to **self-renew**, dividing in a way that makes copies of themselves, and
- 2) the ability to **differentiate**, giving rise to the mature types of cells that make up our organs and tissues.

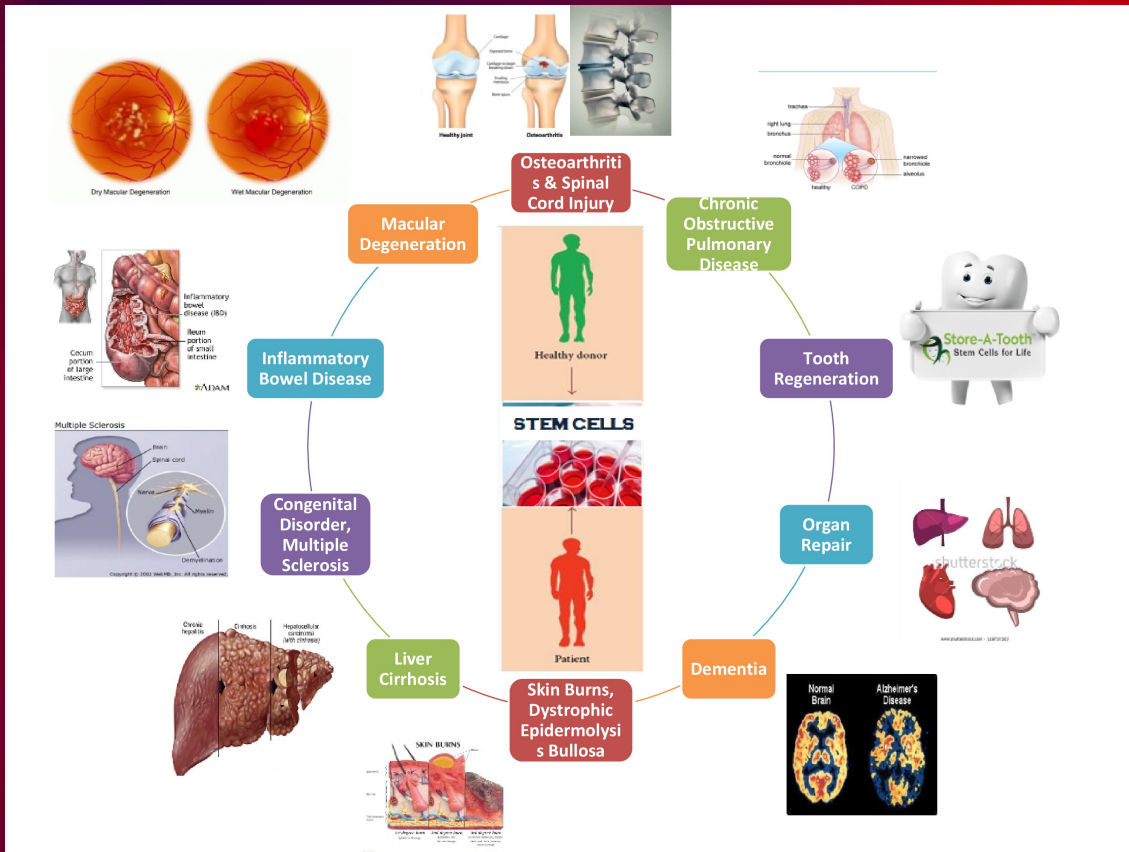
## Various Classes of Stem Cells

(Source: A. Bongso nad E. H. Lee, 2005)

HUMAN STEM CELLS



Potential Clinical Utility of Stem Cells



Guidelines for Stem Cell Research

<http://www.isscr.org/docs/default-source/guidelines/isscr-guidelines-for-stem-cell-research-and-clinical-translation.pdf?sfvrsn=2>

<http://dbtindia.nic.in/wp-content/uploads/2014/05/national-guidelines-of-stem-cell-research.pdf>



### Upcoming Annual Meeting on Stem Cell Reserach

<http://www.isscr.org/home/annual-meeting/isscr-2017-boston>

## From the Desk of Our Faculty

### Personal Details

<b>Name</b>	Dr. R. P. Bharaney
<b>Qualification</b>	M.S. Gen. Surgery
<b>Designation</b>	Add. Dean & Head
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**Que.1.** Stem cells are assumed as ‘Future Medicine’ and an upcoming research area with huge potential to work on. Please share your views in this regards.

Every day, there is a new achievements have been published about stem cells and their research based clinical breakthrough which revealed that how these cells saves the life of patients suffering from critical medical illness specially where conventional medical therapy doesn't work.



many other critical health issues on research basis.

Though there are many constrains to get full-fledged advantage of this unique therapy, but I am very much hopeful that researchers and clinicians will develop more accurate and targeted therapy using stem cell.

**Que.2.** There may be many medical issues which are challenging for medical professionals and desperately need unique approach to resolve. Can these cells be the answer of those challenges?

Yes, there are many medical challenges like Spinal Cord Injury, Alzheimer's, Parkinson's, Diabetes, CHF, Lung Disease, Arthritis, Sickle Cell Anemia and Organ Failure are some of those example in which conventional medical science is struggling or otherwise patient have to take medicine throughout his life which practically cannot assume to the treatment. Frankly speaking, such treatment enhances the life span but not much difference in the quality of life.

There are many references from pre-clinical and clinical research which have shown promising outcome in complicated brain issue, cancer, organ failure as mentioned above.

I just quote one recently published article/study by Yuji Shiba and colleagues from Shinshu University, Matsumoto, Japan which have shown very promising results in treating damaged Monkey heart by induced pluripotent stem cell derived cardiac muscle cells on preclinical trial. It's very delighting to learn such articles which generate hope of future medical advancements for mankind.

**Que.3.** Would you like to mention few initiatives for our medical and allied healthcare professionals to participate in Stem Cell Research in SVDU? Please also provide few suggestions towards development of 'Stem Cell Lab' in our Institute.

It's a great opportunity for our researchers and clinicians that we have basic infrastructure for preliminary experiments and clinical oriented research. Many of our departments such as Surgery, neurology, medicine, cardiology, biochemistry, skin, orthopedics as well as many professionals from Dental and Pharmaceutical side can collaborate and initiate research program on collaborative manner.

A stem cell lab needs to be established in our University where we can harvest adult stem cells from the patients required for research purpose. Further processing, isolation, concentration and lab related work can be done by us in the stem cell lab and further research can be executed by us for clinical research purpose only not for therapeutic purposes, claiming beneficial outcome.

To handle Stem Cell Lab, selected faculty and researchers should join one training program to learn whole process from isolation to clinical/preclinical research using these cells. Apart from this, Sumandeep Vidyapeeth should apply for stem cell ethical clearance in order to execute research plans as per national guidelines. Till then, we can collaborate with those institutes which already have research ethical approval.



**Que.4. What are major Ethical issues and challenges for researchers towards Stem Cell Research? How they can be overcome?**

Ethical issues are crucial for doing any sort of research either preclinical or clinical. As per the international and National guidelines from ICMR and DBT, one should know that Stem cells can be used for research purposes only, not for clinical treatment. For performing clinical experiments, Institute must have to get ethical clearance from national committee and follow the protocol accordingly.

**Que.5. What are your views on collaborative research with established institute/organization on stem cell with biomedical scientists and clinicians towards regenerative medicine approach?**

Collaborative Research with any institution or organization should be on non commercial considerations to preserve ethics in research. Collaboration with institute who are already working in this area will definitely boost the confidence of our researchers as well as precious experience as this is a new field for us. Such collaboration will establish the knowledge bridge of institute/organization. Initially, till we have our own established stem cell lab, our researchers can collaborate with private labs from Gujarat region, hospitals like Tata Memorial Hospital, Mumbai and Bhagwan Mahaveer Cancer Hospital and Research Center, Jaipur and many such established research centers.

Interested faculty and researchers come up and submit their research proposals. Now days, Central Funding Agency like ICMR & Department of Biotechnology offered many call for proposals in this subject. At departmental and inter-departmental level, interested faculty and researchers should come forward to develop collaborative research project on clinical intervention such as wound management, skin disorders, cardiac complication, neurological issues and many more. Our university has already announces its funding policy through which researchers can get seed funding for their novel research project.

In my view, training and sensitization program may be helpful for active participation of faculties in stem cell research. With that note, i am hopeful that in future, medical professionals/ researchers will develop advance version of therapies using stem cells.

## Updates of Research Cell Activities

### 1. Updated Research Incentive Claim (RIC) application form and policy

Updated RIC application form and policy has been circulated from Research Cell on 20th March,2017 with reference of SVRC/ON/2017/17085.

Publication Incentives		Eligibility of claims	Incentive
<b>Applicable to:</b> <ul style="list-style-type: none"> <li>• (1<sup>st</sup>/2<sup>nd</sup>/ Corresponding author only)</li> <li>• Research Paper/Review article</li> <li>• (Max number for review article for incentives can be 2/ per year)</li> <li>• Excluding case studies</li> </ul>	Indexed Journal	Elsiever/ACS/Cochrane Index/ PubMed	6,000/-
		Other indexed (NOT just abstracted)	4,000/-
	Index journals with Impact Factor (Thomson Reuter ONLY)	Range upto 1.0	8,000/-
		Range 1 plus to 2	10,000/-
		Range 2 plus to5	15,000/-
	>5	20,000/-	
<b>Case studies</b>	Indexed	NA	1000/-
<b>Citation based incentives For Publications</b> <b>Annual basis; Submit the details in appraisal form</b>	(Citation in journals other than SVDU) (Applicable after 1 <sup>st</sup> Jan. 2017 onwards)	i10	4,000/- for each i10
		H-Index	2,000/- for each H-index
<b>Books</b> (By Main author/Editor)	New Book	Nationally accepted top publishers	30,000/-
	New edition	Nationally accepted top publishers	15,000/-
<b>Book Chapter</b> (By Main author/Editor)	New Book	Nationally accepted top publishers	6,000/-
	New edition	Nationally accepted top publishers	4,000/-
<b>Patent</b> (claimed by Inventor i.e. faculty)	Indian Patent	On grant	1.0 L
	US patent	On grant	2.5 L
Patent Royalty on commercialization of innovation	Inventor:Applicant		80:20

## 2. Collaboration Policy

Collaboration Policy has been designed with the objective of participating in high impact and quality medical and paramedical research projects in association with experts/scientists of government/private organisation/institute at National and International level.

The policy has been circulated from Research Cell to each institute on 22<sup>nd</sup> March, 2017 with reference of SVRC/ON/2017/17093.

### 3. Opportunities for Extramural Research Projects

Two Call for proposal from Department of Biotechnology with the area of

- 1) Gestational diabetes mellitus, Hypertensive disorder and anaemia
- 2) Health & Sanitation, Product Development and Entrepreneurial Skill development, has been circulated on 6<sup>th</sup> March,2017 with reference of SV/RC/ON/2017/17074 and SV/RC/ON/2017/17075 respectively.

#### 4. Guest Lecture on Intellectual Property Rights (IPR)

Research Cell has organised guest lecture on IPR entitled "Importance and Approaches of Protecting Intellectual Property in Medical World", delivered by Mr. Bhavik Patel, Patent Attorney, SVDU, held at Auditorium of SBKSMI & RC, SVDU on 10<sup>th</sup> March, 2017. This lecture provided basic information on patent, trademark, tradesecrets, copyright and industrial design to our participants. Lecture was followed by questions-answers session. Queries were resolved and appreciated. Program was ended with thanks to the guest speaker and Deputy Research Director.



### Feature News

Times of India: 2nd March,  
2017

<http://timesofindia.indiatimes.com/city/ahmedabad/patient-becomes-doc-to-find-cure-for-thalassemia/articleshow/57419049.cms>



# doc to find cure for thalassemia

TIMES NEWS NETWORK

Ahmedabad: People used to advise him to chose a job that a thalassemic person could do easily. But it was his disease – thalassemia major – that inspired him to become a doctor so that he could try to find a cure for the deadly condition. The 22-year-old Ahmedabad boy, Rohan Jobanputra, has overcome all odds and passed the MBBS exam on Tuesday with 65% marks. He lives in Shahibaug area of the city



Rohan Jobanputra with me and helped me pursue

Times of India: 28th March, 2017

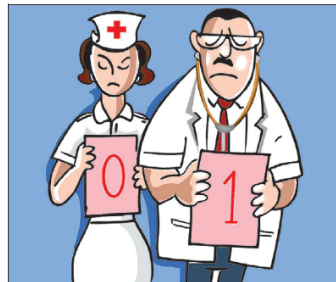
<http://blogs.timesofindia.indiatimes.com/toi-edit-page/why-doctors-need-humanities-including-it-in-medical-education-is-the-best-way-to-bring-back-humanism-to-the-profession/>

## Why Doctors Need Humanities

Including it in medical education is the best way to bring back humanism to the profession

Anand Kishan

Medicine is defined as the art and science of healing. Today globally science has largely overriden the art part of healing. In India, entrance to medical schools is based entirely on tests based on scientific facts and concepts with a little of logical/critical thinking – as handled by the left side of the brain. Our medical curriculum requires hours of drudgery in trying to remember facts and figures. Almost no medical school in India lays any emphasis on art in medical curriculum. The right side of the brain is concerned with fine arts including imagery, poetry and drawing. As someone said "medical school attracts those who are of left brain, but then proceeds to atrophy what is left of their right brain". Unlike physics or chemistry, medicine is not a pure science. Medicine is largely an applied science and it requires certain skills that are developed by observation, practice and experience – similar to the arts more than science. It can be said that



from the doctor coupled with communication. Today science has given doctors far more ammunition than ever before to fight disease, but the reported burnout has made them deafen than ever and they can no longer hear the cries of their patients. A good clinician is one who is armed with scientific knowledge, practices using clinical judgment, compassion and understanding. In India, we need to reverse the pendulum that has swung fully to the science from the art side in medicine. An infusion of arts in medical education might be the solution to this all pervasive deafness of medical professionals. Many medical educationists have argued that art and literature should have a place in the medical curriculum because art helps doctors to understand experiences, illness and human values and that art itself can fulfill a therapeutic role. This kind of education can help doctors grapple with the kinds of existential questions that they expect their patients to answer and that they themselves may not be equipped to answer. All medical colleges usually have a cinema and

